

## ABSTRACT

A catalyst for use in producing a lower aliphatic carboxylic acid ester, wherein the catalyst is produced by a process comprising a step of contacting the catalyst with a gas containing at least one member selected from water, lower aliphatic carboxylic acids and lower aliphatic alcohols; a process for producing the catalyst; and a process for producing a lower aliphatic carboxylic acid ester using the catalyst. The catalyst can exhibit high initial activity and high space time yield, ensure sufficiently long catalyst life in practice in industry, and can prevent the production of by-product materials. A siliceous support for use in a catalyst, which has a silicon content of from 39.7 to 46.3% by mass or a silicon content of from 85 to 99% by mass in terms of silicon dioxide or a crush strength of 30 N or more. By the use of a catalyst comprising the support, a lower aliphatic carboxylic acid ester is produced from lower olefin and a lower aliphatic carboxylic acid in a gas phase without causing great reduction of catalytic activity or cracking or abrasion of the catalyst.